

**LEGISLATIVE SERVICES AGENCY
OFFICE OF FISCAL AND MANAGEMENT ANALYSIS**

301 State House
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FISCAL IMPACT STATEMENT

LS 6370

BILL NUMBER: SB 169

DATE PREPARED: Feb 7, 2001

BILL AMENDED: Feb 6, 2001

SUBJECT: EQSC and Wetland Inventory.

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**FUNDS AFFECTED: X GENERAL
DEDICATED
FEDERAL**

IMPACT: State

Summary of Legislation: (Amended) This bill directs the Department of Environmental Management and the Department of Natural Resources to conduct an inventory of rare, sensitive, and unique wetlands in Indiana by July 1, 2003. The bill makes an appropriation to the Department of Environmental Management to conduct the inventory.

Effective Date: Upon passage; July 1, 2001.

Explanation of State Expenditures: (Revised) The proposal directs IDEM to conduct an inventory of all wetlands in Indiana and prepare a report of the inventory conducted. The bill makes an appropriation to IDEM's Office of Water Management in an amount sufficient to conduct the inventory. Money is to be appropriated from the State General Fund beginning July 1, 2001, and ending June 30, 2003. Money appropriated for this purpose does not revert to the General Fund.

In order to estimate the costs to conduct a state-wide wetlands inventory, IDEM worked with representatives of Indiana University, School of Public and Environmental Affairs, Bloomington. In the 1980's, the U.S. Fish and Wildlife Service and the Department of Natural Resources created National Wetland Inventory (NWI) maps for Indiana. These maps depict areas that meet a set of criteria established for this project that define them as wetlands. The NWI maps are somewhat limited in usefulness, as the level of detail was minimal, errors occurred in the mapping process due to the need to transpose data by hand to map sheets, and little or no field verification of data was possible. The NWI is currently the only comprehensive inventory of wetlands in Indiana. The limitations of the NWI maps extends into all aspects of wetlands, from regulatory programs to natural resource assessments; little is known about the status of Indiana wetlands, the relative acreage of wetlands, and how wetlands are changing as a result of regulated and non-regulated activities. Therefore, the inventory estimate is based on the use of remote sensing to gather information from satellites and analyzed the information with computers after a comprehensive model is developed. Model development

requires a focused, in-the-field study of wetlands to refine analytical procedures and verify the accuracy of the model. The basic model has been used throughout the world to assess various types of natural resources and is the most cost-effective method to achieve the goals of the project.

The associated costs represent the most cost-effective methods for answering questions about the extent, location, and types of wetlands present in Indiana. The information provided is preliminary. Additional consultation would be needed with IDNR, Indiana Geological Services, U.S. Army Corp. of Engineers, and others, to provide an accurate estimate of total costs for a complete wetlands inventory.

The cost estimates below are based on use of remotely sensed multispectral imagery data from Landsat 7 (ETM+) data from NASA. Methodology would be developed and documented so as to facilitate periodic updates and change detection. The classification would have 3 levels:

- (a) wetland – non-wetland discrimination,
- (b) open water / herbaceous / shrub-scrub / and forested,
- (c) differentiation between wetland types in the four categories in (b), wherever possible.

ESTIMATED COST TO CONDUCT INVENTORY OF WETLANDS IN INDIANA USING REMOTE SENSING	
Images and computer service for imaging processing:	58,000
Equipment:	22,000
Salaries and Benefits:	300,000
Travel & Lodging:	24,000
Other Costs:	36,000
Total Cost:	440,000

Images: Costs for imagery is based upon the following rates: \$600 / scene for Landsat 7 ETM+ data; 10 different scenes are needed to fully cover Indiana. Three dates will be used.

Other Costs: consumable supplies, communications (long distance calls, fax), copy service, publication charges.

* This data will only see wetlands that are 1/8 of an acre or greater in size, which means that some wetlands will not appear on the inventory. Current environmental regulations apply to all wetlands, even those smaller than the size that the LANDSAT 7 can accurately discern. Also, as the size of the wetlands becomes closer to this lower limit, the more likely the data will not accurately depict the location and the relative edges of that wetland. Small wetlands may be difficult to classify. The survey is still useful and provides important information to regulatory agencies, citizens, and business persons. It is the most cost-efficient approach to conducting a modern, useful statewide general inventory of wetlands.

* It is important to note that this will not produce maps or information that will conclusively and definitively locate wetlands on the landscape and precisely define the borders of wetlands. Wetland ecosystems, by their nature, fluctuate based on water levels, vegetation, and proximity to other water bodies. While these inventories would allow persons to determine if wetlands existed on a given piece of property, this would still need to be verified on the ground at the subject property by a wetland professional. In particular, for

regulatory purposes, the boundaries of the wetland must still be determined using the current field methods in the federal delineation manual. This is required by federal law and cannot be circumvented by any wetland inventory. Wetland inventories are planning tools and should never be mistaken as a substitute for precise field methods.

* IDEM would seek to partner with other state and federal agencies to conduct and fund an inventory and would examine in greater detail a variety of different approaches in partnership with the other agencies.

Explanation of State Revenues:

Explanation of Local Expenditures:

Explanation of Local Revenues:

State Agencies Affected: Department of Environmental Management, the Department of Natural Resources, and the Legislative Services Agency.

Local Agencies Affected:

Information Sources: Erika Seydel Cheney, Director of the Office of Business and Legislative Relations, IDEM, (317) 232-8598.